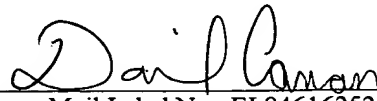


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ATTACHMENT FOR HAIR CLIPPERS

BACKGROUND OF THE INVENTION

1 This invention relates to hair clipper attachments, and more particularly,
2 to hair clipper attachments that are driven by the reciprocating blade of the hair
3 clipper.

4 Hair clippers are well known, as are beard and sideburn trimmers,
5 ears/nose trimmers and the like. Hair clippers typically have wide, relatively thick
6 blades which are good for clipping hair on the head, but are not adapted well for
7 trimming sideburns, mustaches, beards, around the ears, the back of the neck, etc.
8 Beard trimmers, on the other hand, have relatively narrow blades with less depth than
9 hair clipper blades, to cut such hair. Ear and nose hair trimmers have even smaller
10 blades.

11 Purchasing separate complete tools for hair, beards, etc. is expensive,
12 and storage of the various tools is inconvenient. Thus, there is a need to reduce the
13 number of tools needed for overall personal grooming. There is also a need to reduce
14 the amount of storage space required for such tools.

15 Accordingly, one object of this invention is to provide new and
16 improved attachments for hair clippers.

1 Another object is to provide new and improved hair trimmer
2 attachments for hair clippers that reduce the number of separate, complete tools
3 needed for overall personal grooming.

4 Still another object is to provide new and improved hair trimmer
5 attachments for hair clippers that reduce the amount of storage space required for
6 personal grooming tools.

7 SUMMARY OF THE INVENTION

8 In keeping with one aspect of this invention, a hair trimmer or other
9 attachment can be secured over the blades of a conventional hair clipper. The
10 attachment has a stationary blade and a moving blade that cut hair when the moving
11 blade reciprocates. The moving blade of the attachment is driven by a moving blade
12 of the hair clipper, which also reciprocates. The attachment has a housing that secures
13 the attachment to the stationary blade or other part of the hair clipper. A drive
14 member engages the moving blade of the hair clipper when the attachment is secured
15 to the hair clipper, and the drive member in turn drives the moving blade of the hair
16 trimmer attachment to cut hair. The attachment can be easily detached so that the hair
17 clipper blades can be used to cut hair in the usual manner.

18 BRIEF DESCRIPTION OF THE DRAWINGS

19 The above mentioned and other features of this invention and the
20 manner of obtaining them will become more apparent, and the invention itself will be

best understood by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of a hair trimmer attachment made in accordance with this invention, attached to a hair clipper.

FIG. 2 is a perspective view of the attachment and hair clipper of Fig. 1, showing the attachment removed from the hair clipper.

FIG. 3 is an exploded view of the attachment of Fig. 1, with the base shown in cross-section.

FIG. 4 is a perspective view of the base used for the attachment of Fig. 1.

FIG. 5 is a perspective view of the attachment of Fig. 1, partially assembled.

FIG. 6 is another perspective view of the attachment of Fig. 1, partially assembled.

FIG. 7 is another perspective view of the attachment of Fig. 1, partially assembled.

Fig. 8 is another perspective view of the attachment of Fig. 1, partially assembled.

DETAILED DESCRIPTION

Fig. 1 shows a trimmer attachment 10 secured to a hair clipper 12, and Fig. 2 shows the trimmer attachment 10 removed from the hair clipper 12. The hair clipper 12 includes a housing 14, a stationary blade 16 and a moving blade 18. The

1 blades 16, 18 have complimentary blade teeth separated by spaces. In operation, the
2 moving blade 18 reciprocates across the spaces to cut hair that enters the spaces. The
3 stationary blade 16 is secured to the housing 14, typically with screws (not shown). A
4 blade height adjustment 20 can be provided to adjust the height of the moving blade
5 18 with respect to the stationary blade 16. The hair clipper 12 can be used to cut hair
6 in the usual manner when the attachment 10 is removed. When the attachment is
7 secured over the blades, as in Fig. 1, cutting blades in the attachment can be used to
8 cut hair, as will be seen.

9
10 The attachment 10 is shown in greater detail in Figs. 3 through 7. The
11 attachment 10 (Fig. 3) includes a base 122, a drive arm 124, a blade guide 126, a blade
12 spring 128, a reciprocating blade 130 and a stationary blade 132. A guide 134 is also
13 provided. The blades 130, 132 typically are not as wide as the blades 16, 18, to more
14 easily cut hair in confined spaces, such as around the ears. Moreover, the overlap or
15 blade set-back of the moving and stationary teeth of the trimmer attachment is less
16 than the se-back of the hair clipper moving and stationary blade teeth to cut hair
17 closer, in places such as behind the neck.

18 The base 122 (Fig. 4) includes a bottom 138 and sides 140, 142. A snap
19 144 is provided for securement to the stationary blade 16 of the hair clipper 10. The
20 snap 144 is flexible enough to permit easy removal of the attachment from the hair
21 clipper. Indentations 148, 150 can be provided, if desired, to accommodate the screw
22 heads typically found in hair clippers.

23 The base 122 may also have a plurality of openings 152 for securement
of the guide 134, as will be seen. In addition, the base 122 has a recessed region 154

1 sized to fit around part of the periphery of the stationary blade 132, and protrusions
2 156 that pass through openings 158 in the stationary blade 132. The protrusions 156
3 position the stationary blade 132, and can be used to sonically weld the stationary
4 blade 132 to the base, if desired. The base 122 also has side protrusions 160 for
5 securement of the blade spring 128, as will be seen.

6 The reciprocating blade 130 rests against the stationary blade 132 (Fig.
7 5) so that complimentary teeth 162, 163 on the blades 130, 132 cut hair that enters
8 spaces between the teeth. The moving blade 130 also includes at least one opening
9 164 and recesses 166. The blade guide 126 includes a plurality of protrusions 168
10 which fit in the opening 164 and the recesses 166. The blade guide 126 can be
11 secured to the moving blade 130 by sonic welding or any other suitable way, if
12 desired.

13 The blade guide 126 also has a pair of spaced outwardly extending walls
14 170 on the side opposite the protrusions. The walls 170 are sized and arranged to
15 accept a ball 172 of the drive arm 124. Among other things, the ball 172 absorbs
16 manufacturing tolerances and maintains engagement even if the hair clipper blades
17 move in a slight arc, or are slightly angled.

18 The drive arm 124 includes a lateral bar 174 and two side walls 176,
19 178. The side walls 176, 178 surround the sides of the moving blade of the hair
20 clipper when the attachment is secured to the clipper. In this manner, the moving
21 blade 18 of the hair clipper moves the drive arm 124, which in turn moves the blade
22 guide 126 and moving blade 130 to trim hair. The side walls 176, 178 extend far
23 enough from the lateral bar 174 to capture the moving blade 18.

1 The blade spring 128 secures the blade guide/moving blade assembly
2 over the stationary blade 132, while allowing the moving blade to reciprocate in
3 operation, as seen in Fig. 7. The blade spring 128 can be any suitable device,
4 including the spring shown in Fig. 3. The spring 128 includes a bar 180, a plurality of
5 spring members 182, and sides 184. The sides 184 provide stiffness. In addition,
6 ends 186 are bent over and provided with openings 188. The protrusions 160 in the
7 bottom 138 fit in the openings 188 to secure the spring 128 to the bottom 138.

8 The drive arm 124 is secured by the holder 134, which in turn may be
9 secured to the base 122 by pins 190 that fit in the openings 152 of the bottom 138.
10 The pins 190 can also be secured by sonic welding or the like. The drive arm 124 is
11 slideably secured in recesses 192. The holder 134 also secures the attachment 10 to
12 the hair clipper 12. Recesses 194 are provided for this purpose. The holder 134
13 extends at least partially over the top (or cutting teeth) of the stationary blades, and its
14 front and back sides. The sides 140, 142 of the base 122 set the attachment 10
15 properly with respect to the width of the stationary blade 16.

16 The many advantages of this invention are now apparent. Hair can be
17 clipped with the hair clipper, and beards, mustaches, sideburns, around the ears, the
18 back of the neck, etc., can be trimmed with the hair trimmer attachment, without
19 buying separate complete tools. The trimmer attachment can be made to be used with
20 most conventional hair clippers. The amount of storage space required is also
21 reduced. Also, the attachment surrounds the blades of the hair clipper, which are
22 typically larger than the trimmer attachment blades, to avoid inadvertently cutting hair
23 with the hair clippers.

1 While the principles of the invention have been described above in
2 connection with specific apparatus and applications, it is to be understood that this
3 description is made only by way of example and not as a limitation on the scope of the
4 invention. While a hair trimmer attachment has been described, it is contemplated
5 that other devices such as massagers, ear and nose hair trimmers and the like, could be
6 attached to the hair clipper and driven in a similar manner.

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